

APPENDIX

Exhibit 1: MEDICAL CHART REVIEW ABSTRACTION TOOL

**Medical Review of North Carolina, Inc.
NC Medicaid Managed Care
Children with Special Health Care Needs Study
Chart Abstraction Tool**

(Analyst: Please record abstractor ID & date of abstraction in data for age calculations.)

Abstractor name: _____ Date of Abstraction: _____

DEMOGRAPHICS:

Medicaid ID Number	_____
Name	Last _____ First _____
Gender	Male <input type="checkbox"/> Female <input type="checkbox"/> Unknown <input type="checkbox"/>
Date of Birth MM/DD/YYYY	__/__/____
Race	<input type="checkbox"/> Caucasian/White <input type="checkbox"/> African-American/Black <input type="checkbox"/> Hispanic/ Chicano/Cuban <input type="checkbox"/> American Indian/Alaska Native <input type="checkbox"/> Asian <input type="checkbox"/> Other
Primary Care Provider Name	Last _____ First _____ <input type="checkbox"/> MD <input type="checkbox"/> PA <input type="checkbox"/> NP <input type="checkbox"/> DNFC

Medical Record Audit:

All entries dated	<input type="checkbox"/> Yes <input type="checkbox"/> No
All entries identified by author	<input type="checkbox"/> Yes <input type="checkbox"/> No
Each page or electronic file contains patient identification	<input type="checkbox"/> Yes <input type="checkbox"/> No
Problem List	<input type="checkbox"/> Yes <input type="checkbox"/> No

IMMUNIZATION RECORD: (NOTE: DNFC = Date/Documentation not found in chart.)

Hepatitis B		Question-1		Question-2		Question-3	
		YES	NO	YES	NO	YES	NO
Dates:	DNFC <input type="checkbox"/>						
Dates:	DNFC <input type="checkbox"/>						
Dates:	DNFC <input type="checkbox"/>						

DTaP		Question-1		Question-2		Question-3	
		YES	NO	YES	NO	YES	NO
Dates:	DNFC <input type="checkbox"/>						
Dates:	DNFC <input type="checkbox"/>						
Dates:	DNFC <input type="checkbox"/>						
Dates:	DNFC <input type="checkbox"/>						
Dates:	DNFC <input type="checkbox"/>						

Td		Question-1		Question-2		Question-3	
		YES	NO	YES	NO	YES	NO
Dates:	DNFC <input type="checkbox"/>						

Hib Vaccine Name:	<input type="checkbox"/> Unknown
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Hib		Question-1		Question-2		Question-3	
		YES	NO	YES	NO	YES	NO
Dates:	DNFC <input type="checkbox"/>						
Dates:	DNFC <input type="checkbox"/>						
Dates:	DNFC <input type="checkbox"/>						
Dates:	DNFC <input type="checkbox"/>						

Inactivated Poliovirus (Polio)		Question-1		Question-2		Question-3	
		YES	NO	YES	NO	YES	NO
Dates:	DNFC <input type="checkbox"/>						
Dates:	DNFC <input type="checkbox"/>						
Dates:	DNFC <input type="checkbox"/>						
Dates:	DNFC <input type="checkbox"/>						

MMR		Question-1		Question-2		Question-3	
		YES	NO	YES	NO	YES	NO
Date:	DNFC <input type="checkbox"/>						
Date:	DNFC <input type="checkbox"/>						

Varicella		Question-1		Question-2		Question-3	
		YES	NO	YES	NO	YES	NO
Date:	DNFC <input type="checkbox"/>						
Date:	DNFC <input type="checkbox"/>						

Pneumococcal		Question-1		Question-2		Question-3	
		YES	NO	YES	NO	YES	NO
Date:	DNFC <input type="checkbox"/>						
Date:	DNFC <input type="checkbox"/>						
Date:	DNFC <input type="checkbox"/>						
Date:	DNFC <input type="checkbox"/>						

(NOTE: DNFC= Date/Documentation not found in chart.)

All Well Child visits by same provider	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Most recent well child care visit date	-- / -- / -- DNFC <input type="checkbox"/>
Temperature	<input type="checkbox"/> Yes <input type="checkbox"/> No
Pulse	<input type="checkbox"/> Yes <input type="checkbox"/> No
Respirations	<input type="checkbox"/> Yes <input type="checkbox"/> No
Blood Pressure	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Head Circumference	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Height	<input type="checkbox"/> Yes <input type="checkbox"/> No
Weight	<input type="checkbox"/> Yes <input type="checkbox"/> No
Nutrition/Appetite	<input type="checkbox"/> Yes <input type="checkbox"/> No

Subjective eyes/vision assessment	<input type="checkbox"/> Yes <input type="checkbox"/> No
Objective eye/vision assessment	<input type="checkbox"/> Yes <input type="checkbox"/> No
Subjective ears/hearing assessment	<input type="checkbox"/> Yes <input type="checkbox"/> No
Objective ears/hearing assessment	<input type="checkbox"/> Yes <input type="checkbox"/> No
Nose/Mouth	<input type="checkbox"/> Yes <input type="checkbox"/> No
Skin	<input type="checkbox"/> Yes <input type="checkbox"/> No
Heart	<input type="checkbox"/> Yes <input type="checkbox"/> No
Lungs	<input type="checkbox"/> Yes <input type="checkbox"/> No
Abdomen	<input type="checkbox"/> Yes <input type="checkbox"/> No
Hips	<input type="checkbox"/> Yes <input type="checkbox"/> No
Neuro/Tone	<input type="checkbox"/> Yes <input type="checkbox"/> No
GI	<input type="checkbox"/> Yes <input type="checkbox"/> No
GU	<input type="checkbox"/> Yes <input type="checkbox"/> No
Tobacco	<input type="checkbox"/> Yes <input type="checkbox"/> No
Alcohol	<input type="checkbox"/> Yes <input type="checkbox"/> No
Substance Abuse	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sexuality Issues	<input type="checkbox"/> Yes <input type="checkbox"/> No
Past medical history	<input type="checkbox"/> Yes <input type="checkbox"/> No

Anticipatory guidance	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Partial
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Laboratory Tests: (NOTE: DNFC= Date/Documentation not found in chart.)

Menstruating females	__/__/____	DNFC <input type="checkbox"/>	N/A <input type="checkbox"/>	Skip <input type="checkbox"/>
Hemoglobin/Hematocrit	__/__/____	DNFC <input type="checkbox"/>		
	__/__/____	DNFC <input type="checkbox"/>	Skip <input type="checkbox"/>	

Sexually active patients	__/__/____	DNFC <input type="checkbox"/>	Skip <input type="checkbox"/>
Urinalysis	__/__/____	DNFC <input type="checkbox"/>	Skip <input type="checkbox"/>
	__/__/____	DNFC <input type="checkbox"/>	Skip <input type="checkbox"/>
	__/__/____	DNFC <input type="checkbox"/>	Skip <input type="checkbox"/>
	__/__/____	DNFC <input type="checkbox"/>	Skip <input type="checkbox"/>
	__/__/____	DNFC <input type="checkbox"/>	Skip <input type="checkbox"/>

Lead Screening	__/__/____	DNFC <input type="checkbox"/>
	__/__/____	DNFC <input type="checkbox"/>

Sickle Cell	__/__/____	DNFC <input type="checkbox"/>
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Other Components:

Allergies	<input type="checkbox"/> Yes <input type="checkbox"/> No
Medication List	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A

Treatment plan	<input type="checkbox"/> Yes <input type="checkbox"/> No
Formalized treatment plan	<input type="checkbox"/> Yes <input type="checkbox"/> No Skip <input type="checkbox"/>

Written developmental assessment.	Date __/__/____	<input type="checkbox"/> DNFC
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Referrals: (NOTE: DNFC= Date/Documentation not found in chart.)

Referrals	--/--/----	<input type="checkbox"/> DNFC
	--/--/----	<input type="checkbox"/> DNFC
	--/--/----	<input type="checkbox"/> DNFC
	--/--/----	<input type="checkbox"/> DNFC
	--/--/----	<input type="checkbox"/> DNFC
	--/--/----	<input type="checkbox"/> DNFC
Referral follow up documented		<input type="checkbox"/> Skip
	--/--/----	<input type="checkbox"/> DNFC
	--/--/----	<input type="checkbox"/> DNFC
	--/--/----	<input type="checkbox"/> DNFC
	--/--/----	<input type="checkbox"/> DNFC
	--/--/----	<input type="checkbox"/> DNFC
	--/--/----	<input type="checkbox"/> DNFC

Table 1: Selection Criteria to Define Children with Special Health Care Needs

Program/Variables	Special Health Care Needs Indicators
First set of criteria:	
Children's Special Health Services (CSHS)	Children's Special Health Services identified by specific billing provider numbers (codes 7700548, 3403062, 7210531) <i>or</i> by procedure revenue codes for CSHS: durable medical equipment, CSHS: speech therapy, and CSHS: physical therapy (codes Y2200, Y2201, Y2202)
OR	
Child Service Coordination (CSC)	Child Service Coordination identified by procedure revenue codes for case management (one unit = 15 minutes) and case management- DEC child service coordinator (codes T1016, Y2155) <i>in combination with</i> billing provider specialty of health department/developmental evaluation center (DEC) (code 060)
OR	
Developmental Evaluation Center (DEC)	Developmental Evaluation Centers identified by specific billing provider numbers (codes 3403400 - 3403499, 3403061) <i>in combination with</i> billing provider specialty of health department/developmental evaluation center (DEC) (code 060) and billing provider type of clinic, other (code 038)
OR	
Children's Developmental Services Agency (CDSA)	Children's Developmental Services Agencies identified by specific billing provider numbers (codes 3403405, 3403406, 3403413, 3403419) <i>in combination with</i> billing provider specialty of children's developmental services agency (code 115) and billing provider type of clinic, other (code 038)

Table continued on next page.

Table 1: Selection Criteria to Define Children with Special Health Care Needs - *CONTINUED*

Program/Variables	Special Health Care Needs Indicators
OR	
Current Procedural Terminology (CPT codes)	Procedure revenue codes for DEC clinical diagnosis and assessment, DEC physical treatment and patient instruction, DEC psychological diagnosis and assessment, DEC psychological treatment & patient instruction, DEC socio-emotional dysfunction diagnosis & assessment, DEC socio-emotional dysfunction treatment & patient instruction, DEC speech language and hearing diagnosis & assessment, DEC speech, language & hearing treatment & patient instruction, DEC neuromotor diagnosis and assessment, DEC neuromotor treatment & patient instruction, DEC dysfunction of learning diagnosis & assessment, DEC dysfunction of learning treatment & patient instruction, DHS neuromuscular assessment, DHS intermediate assessment, medical nutrition therapy for children, and case management- DEC child service coordinator (codes Y2100, Y2101, Y2102, Y2103, Y2104, Y2105, Y2106, Y2107, Y2108, Y2109, Y2110, Y2111, Y2134, Y2136, Y2351, Y2155).
Second set of criteria:	
Special Needs Code	Special needs codes indicating disabled, in foster care or other out-of-home placement, receiving foster care or adoption assistance, self-identified (codes 1-4).

Table 2: Procedures to check immunization, lab test, written developmental assessment, and referral and follow-up compliance, according to ACIP's recommendations and Health Check screening schedule

Procedure/Action	Recommendations followed in analysis
Immunizations	
Hepatitis B vaccine	
HEP1	at 0-2 months
HEP2	at 1-4 months but at least 1 month after first dose
HEP3	at 6-18 months but at least 4 months after first dose and 2 months after second dose
Diphtheria/Tetanus/Pertussis vaccine	
DTAP1	at 2 months
DTAP2	at 4 months
DTAP3	at 6 months
DTAP4	at 15-18 months, or as early as 12 months if DTAP3 was 6 or more months earlier
DTAP5	at 4-6 years
Tetanus/Diphtheria vaccine	
TD1	at 11-12 years but at least 5 years after last dose of tetanus/diphtheria containing vaccine (comparison to DTAP5, if documented)
Haemophilus Influenza B vaccine	
Alternatively: 4-dose vaccine	<i>4-dose vaccine</i>
HIB1	at 2 months
HIB2	at 4 months
HIB3	at 6 months
HIB4	at 12-15 months
or 3-dose vaccine	<i>3-dose vaccine</i>
HIB1	at 2 months
HIB2	at 4 months
HIB3	at 12-15 months
or catch-up shot	<i>catch-up shot</i>
HIB1	between 15 and 59 months
Inactivated Poliovirus vaccine	
POLIO1	at 2 months
POLIO2	at 4 months
POLIO3	at 6-18 months
POLIO4	at 4-6 years
Mumps/Measles/Rubella vaccine	
MMR1	at 12-15 months
MMR2	at 4-6 years, or any time after 12 months but at least one month after first dose of MMR
Varicella vaccine	
VAR1	at 12-18 months, or if missed, first part of catch-up at or after 13 years
VAR2	second dose for catch-up at or after age 13 years but at least one month after first dose

Table 2: Procedures to check immunization, lab test, written developmental assessment, and referral and follow-up compliance, according to ACIP's recommendations and Health Check screening schedule - *CONTINUED*

Procedure/Action	Recommendations followed in analysis
Pneumococcal conjugate vaccine	
PNED1	at 2 months
PNED1	at 4 months
PNED1	at 6 months
PNED1	at 12-15 months
Lab tests	
Hemoglobin/Hematocrit	
Hem1	at 1-9 months
Hem2	at 11-21 years for menstruating females
Urinalysis	
UA1	at 5 years
UA2	at 11-18 years (periodically) for sexually active males and females. Treated "as recommended" if a (second) Urinalysis present for sexually active child between 11-18 years
UA3	
UA4	
UA5	
Lead Screening	
LSCR1	first test at 12 months, or catch-up at 5 years (no second test for catch-up)
LSCR2	second test at 24 months
Sickle Cell Testing	
Sickle2	at age 0-3 months
Assessments	
Written Developmental Assessment	
WDA1	Recommended at age 12 months, 24 months, at 5 years. Treated "as recommended" if at 6-18 months, 19-30 months or 66-90 months
Referrals	
Referrals and follow-up	
REF1	Treated "as recommended" if at least one referral and one follow-up documented.
REF2	
REF3	
REF4	
REF5	
REF6	
REFUP1	
REFUP2	
REFUP3	
REFUP4	
REFUP5	
REFUP6	

Depending on age at end of study period, a child had to have all immunizations he/she could have had for his/her age, to be labeled vaccinated "as recommended". For instance, if a child was 11 months old at the end of the study period, he/she

should have had DTAP1, DTAP2, and DTAP3, but was not old enough to be required to have DTAP4 and DTAP5. If DTAP1-DTAP3 were administered as recommended, the child was counted as appropriately immunized, and was coded vaccinated "as recommended". The same applies to lab tests and written developmental assessments (although there is only one indicator for written developmental assessment supplied).

Table 3: Procedures to check immunization, lab test, written developmental assessment, and referral and follow-up compliance, according to an **extended** childhood immunization (ACIP) and Health Check screening schedule

Procedure/Action	Recommendations followed in analysis
Immunizations	
Hepatitis B vaccine	
HEP1	at 0-3 months
HEP2	at 0-5 months but at least 1 month after first dose
HEP3	at 5-19 months but at least 4 months after first dose and 2 months after second dose
Diphtheria/Tetanus/Pertussis vaccine	
DTAP1	at 0-3 months
DTAP2	at 3-5 months
DTAP3	at 5-7 months
DTAP4	at 14-19 months, or as early as 11 months if DTAP3 was 6 or more months earlier
DTAP5	at 47-84 months
Tetanus/Diphtheria vaccine	
TD1	at 131-156 months but at least 5 years after last dose of tetanus/diphtheria containing vaccine (comparison to DTAP5, if documented)
Haemophilus Influenza B vaccine	
<i>Alternatively: 4-dose vaccine</i>	<i>4-dose vaccine</i>
HIB1	at 0-3 months
HIB2	at 3-5 months
HIB3	at 5-7 months
HIB4	at 11-16 months
<i>or 3-dose vaccine</i>	<i>3-dose vaccine</i>
HIB1	at 0-3 months
HIB2	at 3-5 months
HIB3	at 11-16 months
<i>or catch-up shot</i>	<i>catch-up shot</i>
HIB1	between 15 and 59 months (<i>unchanged</i>)

Table 3: Procedures to check immunization, lab test, written developmental assessment, and referral and follow-up compliance, according to an **extended** childhood immunization (ACIP) and Health Check screening schedule

Procedure/Action	Recommendations followed in analysis
Inactivated Poliovirus vaccine	
POLIO1	at 1-3 months
POLIO2	at 3-5 months
POLIO3	at 5-19 months
POLIO4	at 47-84 months
Mumps/Measles/Rubella vaccine	
MMR1	at 11-16 months
MMR2	at 47-84 months, or any time after 11 months but at least one month after first dose of MMR
Varicella vaccine	
VAR1	at 11-19 months, or if missed, first part of catch-up at or after 156 months
VAR2	second dose for catch-up at or after age 156 months but at least one month after first dose
Pneumococcal conjugate vaccine	
PNED1	at 1-3 months
PNED1	at 3-5 months
PNED1	at 5-7 months
PNED1	at 11-16 months
Lab tests	
Hemoglobin/Hematocrit	
Hem1	at 0-10 months
Hem2	at 131-264 months for menstruating females
Urinalysis	
UA1	at 59-72 months
UA2	at 131-228 months (periodically) for sexually active males and females. Treated "as recommended" if a (second) Urinalysis present for sexually active child between 131-228 months
UA3	
UA4	
UA5	
Lead Screening	
LSCR1	first test at 11-13 months, or catch-up at 59-72 months (no second test for catch-up)
LSCR2	second test at 23-25 months
Sickle Cell Testing	
Sickle2	at age 0-4 months
Assessments	
Written Developmental Assessment	
WDA1	Recommended at age 12 months, 24 months, at 5 years. Treated "as recommended" if at 6-18 months, 19-30 months or 66-90 months (<i>unchanged</i>)

Table 3: Procedures to check immunization, lab test, written developmental assessment, and referral and follow-up compliance, according to an **extended** childhood immunization (ACIP) and Health Check screening schedule - *CONTINUED*

Procedure/Action	Recommendations followed in analysis
Referrals	
Referrals and follow-up	
REF1	Treated "as recommended" if at least one referral and one follow-up documented (<i>unchanged</i>).
REF2	
REF3	
REF4	
REF5	
REF6	
REFUP1	
REFUP2	
REFUP3	
REFUP4	
REFUP5	
REFUP6	